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State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF HAZARDOUS WASTE MANAGEMENT

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MEMORANDUM

MAR 16 1987

TO: Henry Schuver, Ground Water Quality Control
Division of Water Resources

THRU: Elizabeth Fernandez-Obregon, Ground Water Quality Control
Division of Water Resources

THROUGH: Wayne Howitz, Section Chief
Quality Assurance/Quality Control

FROM: Brian Crisafulli
Bureau of Compliance and Technical Services

SUBJECT: RCRA-CME - Chevron, Perth Amboy

The sampling under RCRA - Compliance Monitoring Evaluation (CME)for Chevron USA, Inc. (Perth Amboy Refinery) was conducted by the QA/QC unit on February 5, 1987. The sampling was conducted on four inch monitoring wells at the North Field Lagoon and the East Yard Pond. The landfarming area was not considered in the sampling program because it has been closed down since 1982 and little, if any, contamination had been indicated when monitoring the landfarm's wells.

Chevron's Perth Amboy facility is a massive facility covering a large sector of an industrial neighborhood. Only the small areas (cited above) are monitored for ground water contamination. Considering the nature of the local industrial environment and the size of the facility itself, a true upgradient well showing background conditions does not exist for the facility as a whole. However, the best representation of an upgradient well with the least contaminated background conditions at the facility was well SB-13b around the East Yard Pond. Along with upgradient well SB-13b, three downgradient wells were sampled; well SB-11 around the East Yard Pond and wells NF-9B and NF-8 around the North Field Lagoon. All four wells were sampled for volatile organics, base neutrals, PCB's and metals (both suspended and dissolved).

Bailing of the four wells was accomplished first, with all four wells purged dry before their recommended volumes had been achieved. The cleanest well (SB-13b) was bailed first and the most contaminated well (SB-11) was purged last by the on-site PVC 2 inch bailer. The wells were then let to recharge so that samples could be taken. We used 3.5 inch teflon bailers, dedicated to individual wells, one each for purging and one each for sampling the three wells. SB-11 was purged by the two inch PVC bailer and sampled with a dedicated 3.5 inch teflon bailer.

The sampling techniques applied and the wells chosen for sampling should give a relatively clear picture of the contamination of the ground water and determine if the facility has been evaluated properly based on their monitoring program under RCRA.

OBSERVATIONS: The following are observations that were witnessed at the Chevron, Perth Amboy facility:

1) The four inch diameter monitoring wells are not truly four inch in diameter on the inside of the casing. The average inner casing diameter of monitoring wells NF-9B, NF-8, SB-13b, SB-11, SB-12 and SB-10 were approximately 3.75 inches wide. The outer casings averaged 4.5 inches wide. The plastic casing itself averaged just over .5 an inch wide. Bailers used for a 4 inch well were 3.5 inches wide and the submersible pump was 3.75 inches wide. Our teflon bailers were able to descend all of the wells sampled; however, our submersible pump could not fit down the casing because of the size of the wells.

2) Well SB-12 is offset at about 4 feet down. This is readily noticeable when looking down inside the well casing. It was evident that our 3.5 bailer could not proceed down inside the casing of the well.

3) Well SB-11 was completely covered with oil and tar. It covered the entire PVC casing inside and out, the outer steel casing, the padlock, the ground surrounding the well, the dedicated bailer and the rope that was attached to the bailer and the well. In fact the oil/tar mixture filled-up the space between the outer and inner casings.

4) Well NF-8, had its steel casing hinge completely rusted off from the top cover of the outer steel casing. Also, the padlock was missing.

5) The NJPDES permit indicates in the "Additional General Conditions for Industrial Waste Management Facilities and Hazardous Waste Interim Status Facilities" under 1.1, that "the system of operating ground water monitoring wells shall consist of 14 existing satisfactory ground water monitoring wells and no new ground water monitoring wells "...as defined in N.J.A.C. 7:14A-6.13 and shall be subject to Department approval". Also, 1.8 notes that the wells that are "rendered inadequate for their intended use" should be replaced with the Department's approval.

Recommendations: The following are recommendations that should be addressed at the Chevron USA, Inc, Perth Amboy Refinery:

1) All wells that are not 4 inches in diameter on the inside of the casing should be replaced. These wells are not completely accessible to the Department's equipment and cannot be considered adequate for the purpose of a sampling program.

2) Well SB-12 should be replaced because the well is visibly offset.

3) Considering well SB-11 is totally covered with oil and tar, a question has to be raised as to he integrity and the quality control of this well and its dedicated two inch bailer. This well should also be replaced. If a new well is installed, sampling procedures should include pumping of the well and the material that is purged be put directly into the lagoon without any spillage around the well casing itself. This may best be accomplished by having a pump and a bailer dedicated to this well.

4) Well NF-8 should have the top of the steel casing welded back on to the outer steel casing and padlocked.

Conclusion: All in all, the sampling of the 4 wells at Chevron went fairly smooth considering the complications mentioned above. However, Chevron's wells have more to be desired. Since the wells were in existence before the NJPDES permit, it may be worth the effort to replace the wells under a major modification of their NJPDES permit.

We appreciate your assistance on February 5, and if you have any questions or require information about the data package please feel free to call me at 633-0708.

BC/cs
c. Carmin Hutchinson, Hazardous Waste Planning
Doug Greenfield, Central Field Office